

## SEQUENCE LISTING

<110> Gurskaya, Nadejda  
Fradkov, Arkadiy  
Lukyanov, Sergey  
Punkova, Natalia

<120> Fluorescent Protein From Aequorea Coeruleascens And Uses Thereof

<130> EVRO-0006

<140> US 10/501,629

<141> 2005-07-15

<160> 25

<170> FastSEQ for Windows Version 4.0

<210> 1  
<211> 941  
<212> DNA  
<213> Aequoria coerulescens

<400> 1  
attcaaaaca ctgcagaatt ttggatagat tttcctgcta cttcacacgc ataaaagaca 60  
agaaaagatga gtaaaggagc agaacttttc actggagttg tcccaattct tattgaatta 120  
aatggtgatg ttaatggca caaattctct gtcatggag agggcgaagg tgatgcgaca 180  
tacgaaaagt taacccttaa atttatttgc actacagggaa aactacctgt tccatggcca 240  
acacttgtca ctactttctc ttatggtgtt caatgcttt caagatatacc agatcatatg 300  
aaacagcatg acttcttcaa gagtgccatg cctgaagggtt atatacagga aagaactata 360  
ttttcaaaag atgacgggaa ctacaagtgc cgtgctgaag tcaagttcgaa aggtgataacc 420  
ctggtaata gaatttgagtt aacaggtact gattttaaag aagatggaaa catccttgga 480  
aataaaatgg aataacaacta taacgcacat aatgtataca tcatgacaga caaagcaaaa 540  
aatggaatca aagttaactt caaaaatttgc cacaacatttgc aagatggaaag cggtcaactt 600  
gcagaccatt atcaacaaaa tactccaatt ggcatggcc ctgtcctttt accagataac 660  
cattacctgt ccacacaatc taccctttcc aaagatccc acgaaaagag agatcacatg 720  
atctattttg agtttgtaac agctgctgcg attacacatg gcatggatga attatacaaa 780  
taaatgtata gacttcaagt tgacactaacat gttgtccaaac aattactaaa atctcagggt 840  
tcctggtaa aatcaggctg agatatttt tacatattat agattcatta gaattattta 900  
aatactttat agatgttatt gataggggtt attttcttat t 941

<210> 2  
<211> 238  
<212> PRT  
<213> Aequoria coerulescens

<400> 2  
Met Ser Lys Gly Ala Glu Leu Phe Thr Gly Val Val Pro Ile Leu Ile  
1 5 10 15  
Glu Leu Asn Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
20 25 30  
Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys  
35 40 45

Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe  
 50 55 60  
 Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln  
 65 70 75 80  
 His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Ile Gln Glu Arg  
 85 90 95  
 Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Ser Arg Ala Glu Val  
 100 105 110  
 Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Thr Gly Thr  
 115 120 125  
 Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly Asn Lys Met Glu Tyr Asn  
 130 135 140  
 Tyr Asn Ala His Asn Val Tyr Ile Met Thr Asp Lys Ala Lys Asn Gly  
 145 150 155 160  
 Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val  
 165 170 175  
 Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro  
 180 185 190  
 Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Thr Leu Ser  
 195 200 205  
 Lys Asp Pro Asn Glu Lys Arg Asp His Met Ile Tyr Phe Glu Phe Val  
 210 215 220  
 Thr Ala Ala Ala Ile Thr His Gly Met Asp Glu Leu Tyr Lys  
 225 230 235

<210> 3  
 <211> 717  
 <212> DNA  
 <213> Aequoria coerulescens

<400> 3  
 atgagtaaaag gagcagaact tttcaactgga gctgtccaa ttcttattga attaaatgg 60  
 gatgttaatg ggcacaaatt ctctgtcagt ggagagggcg aaggtgatgc gacatacgga 120  
 aagttAACCC ttaaaatttat ttgcactaca ggaaaactac ctgttccatg gccaacactt 180  
 gtcactactt tctcttatgg tggtaatgc ttttcaagat atccagatca tatgaaacag 240  
 catgacttct tcaagagtgc catgcctgaa ggttatatac aggaaagaac tatattttc 300  
 aaagatgacg ggaactacaa gtcgcgtgct gaagtcaagt tcgaaggtga taccctgggt 360  
 aatagaattt agttAACAGG tactgatttt aaagaagatg gaaacatcct tggaaataaa 420  
 atgaaataca actataacgc acataatgta tacatcatga cagacaaagc aaaaaatgga 480  
 atcaaaggta acttcaaaat tagacacaac attgaagatg gaagcgttca acttgagac 540  
 cattatcaac aaaatactcc aattggcgat ggccctgtcc ttttaccaga taaccattac 600  
 ctgtccacac aatctaccct ttccaaagat cccaaacaaa agagagatca catgatctat 660  
 tttgggTTTg taacagctgc tgcgattaca catggcatgg atgaattata caaataa 717

<210> 4  
 <211> 238  
 <212> PRT  
 <213> Aequoria coerulescens

<400> 4  
 Met Ser Lys Gly Ala Glu Leu Phe Thr Gly Ala Val Pro Ile Leu Ile  
 1 5 10 15  
 Glu Leu Asn Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
 20 25 30  
 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys  
 35 40 45

Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe  
 50 55 60  
 Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln  
 65 70 75 80  
 His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Ile Gln Glu Arg  
 85 90 95  
 Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Ser Arg Ala Glu Val  
 100 105 110  
 Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Thr Gly Thr  
 115 120 125  
 Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly Asn Lys Met Glu Tyr Asn  
 130 135 140  
 Tyr Asn Ala His Asn Val Tyr Ile Met Thr Asp Lys Ala Lys Asn Gly  
 145 150 155 160  
 Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val  
 165 170 175  
 Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro  
 180 185 190  
 Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Thr Leu Ser  
 195 200 205  
 Lys Asp Pro Asn Glu Lys Arg Asp His Met Ile Tyr Phe Gly Phe Val  
 210 215 220  
 Thr Ala Ala Ala Ile Thr His Gly Met Asp Glu Leu Tyr Lys  
 225 230 235

<210> 5  
 <211> 717  
 <212> DNA  
 <213> Aequoria coerulescens

<400> 5  
 atgagtaaaag gagcagaact tttcactgga gctgtccaa ttcttattga attagatgg 60  
 gatgttaatg ggcacaatt ctctgtcagt ggagagggcg aaggtgatgc gacatacgga 120  
 aagttAACCC ttaaaatttat ttgcaactaca ggaaaactac ctgttccatg gccaacactt. 180  
 gtcactactt tctcttatgg tggtaatgc ttttcaagat atccagatca tatgaaacag 240  
 catgacttct tcaagagtgc catgcctgaa ggttatatac agaaaaaac tatattttc 300  
 aaagatgacg ggaactacaa gtgcgtgct gaagtcaagt tcgaaggta taccctgggtt 360  
 aatagaattt agttaacagg tactgatttt aaagaagatg gaaacatcct tggaaataaa 420  
 atgaaataca actataacgc acataatgta tacatcatga cagacaaagc aaaaaatgga 480  
 atcaaagtta acttcaaaat tagacacaac attgaagatg gaagcggtca acttgagac 540  
 cattatcaac aaaatactcc aattggcgat ggccctgtcc ttttaccaga taaccattac 600  
 ctgtccacac aatctaccct ttccaaagat cccaaacaaa agagagatca catgatctat 660  
 tttgggtttg taacagctgc tgcgattaca catggcatgg atgaattata caaataa 717

<210> 6  
 <211> 238  
 <212> PRT  
 <213> Aequoria coerulescens

<400> 6  
 Met Ser Lys Gly Ala Glu Leu Phe Thr Gly Ala Val Pro Ile Leu Ile  
 1 5 10 15  
 Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
 20 25 30  
 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys  
 35 40 45

Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe  
 50 55 60  
 Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln  
 65 70 75 80  
 His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Ile Gln Glu Arg  
 85 90 95  
 Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Ser Arg Ala Glu Val  
 100 105 110  
 Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Thr Gly Thr  
 115 120 125  
 Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly Asn Lys Met Glu Tyr Asn  
 130 135 140  
 Tyr Asn Ala His Asn Val Tyr Ile Met Thr Asp Lys Ala Lys Asn Gly  
 145 150 155 160  
 Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val  
 165 170 175  
 Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro  
 180 185 190  
 Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Thr Leu Ser  
 195 200 205  
 Lys Asp Pro Asn Glu Lys Arg Asp His Met Ile Tyr Phe Gly Phe Val  
 210 215 220  
 Thr Ala Ala Ala Ile Thr His Gly Met Asp Glu Leu Tyr Lys  
 225 230 235

<210> 7  
 <211> 720  
 <212> DNA  
 <213> Aequoria coerulescens

<400> 7  
 atgagtaaaag gagcagaact tttcaactgga attgtccaa ttcttattga attaaatgg 60  
 gatgttaatg ggcacaaatt ctctgtcagt ggagagggcg aaggtgatgc gacatacgga 120  
 aagttAACCC ttaaatttat ttgcactaca ggaaaactat gacctgttcc atggccaaca 180  
 cttgtcacta ctttcttta tgggttcaa tgctttcaa gatatccaga tcataatgaaa 240  
 cagcatgact tcttcagag tgccatgcct gaagggtata tacaggaaag aactatattt 300  
 ttcaagatg acgggaacta caagtcgcgt gctgaagtca agttcgaagg tgataccctg 360  
 gttaatagaa ttgagttaac aggtactgat tttaaagaag atggaaacat ccttgaaat 420  
 aaaatggaat acaactataa cgcacataat gtatacatca tgacagacaa agcaaaaaat 480  
 ggaatcaaag ttaactcaa aatttagacac aacattgaag atggaagcgt tcaacttgca 540  
 gaccattatac aacaaaatac tccaattggc gatggccctg tccttttacc agataaccat 600  
 tacctgtcca cacaatctac ccttccaaa gatcccacg aaaagagaga tcacatgatc 660  
 tattttgggt ttgtaacagc tgctgcgatt acacatggca tggatgaatt atacaataa 720

<210> 8  
 <211> 238  
 <212> PRT  
 <213> Aequoria coerulescens

<400> 8  
 Met Ser Lys Gly Ala Glu Leu Phe Thr Gly Ile Val Pro Ile Leu Ile  
 1 5 10 15  
 Glu Leu Asn Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
 20 25 30  
 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys

35	40	45
Thr	Thr	Gly
Lys	Lys	Leu
Pro	Pro	Val
50	55	60
Ser	Tyr	Gly
Val	Gln	Cys
Phe	Ser	Arg
65	70	75
His	Asp	Phe
Phe	Phe	Lys
85	90	95
Thr	Ile	Phe
Phe	Phe	Glu
100	105	110
Lys	Phe	Glu
Gly	Asp	Thr
115	120	125
Asp	Phe	Lys
Phe	Lys	Glu
130	135	140
Tyr	Asn	Ala
His	Asn	Val
145	150	155
Ile	Lys	Val
Asn	Phe	Lys
Ile	Arg	His
165	170	175
Gln	Leu	Ala
Asp	Tyr	Gln
180	185	190
Val	Leu	Leu
Pro	Asp	Asn
195	200	205
Lys	Asp	Pro
Asn	Glu	Lys
210	215	220
Thr	Ala	Ala
Ala	Ile	Thr
225	230	235
His	Gly	Met
		Asp
		Glu
		Leu
		Tyr
		Lys

<210> 9  
 <211> 717  
 <212> DNA  
 <213> Aequoria coerulescens

<400> 9  
 atgagtaaag gagcagaact tttcaactgga attgtccaa ttcttattga attaaatgg 60  
 gatgttaatg ggcacaaatt ctctgtcagt ggagagggcg aaggtgatgc gacatacgg 120  
 aagttaaccc ttaaatttat ttgcaactaca ggaaaactac ctgttccatg gccaacactt 180  
 gtcactactc tctcttatgg tggtaatgc ttttcaagat atccagatca tatgaaacag 240  
 catgacttct tcaagagtgc catgcctgaa ggttatatac aggaaagaac tatattttc 300  
 gaagatgacg ggaactacaa gtcgcgtgct gaagtcaagt tcgaaggtga taccctgg 360  
 aatagaattg agttaacagg tactgatttt aaagaagatg gaaacatcct tggaaataaa 420  
 atggaataaca actataacgc acataatgta tacatcatga cagacaaagc aaaaaatgga 480  
 atcaaagtta acttcaaaaat tagacacaac attgaagatg gaagcgttca acttgac 540  
 cattatcaac aaaatactcc aattggcgat ggcccgttcc ttttaccaga taaccattac 600  
 ctgtccacac aatctaccct ttccaaagat cccaaacgaaa agagagatca catgatctat 660  
 tttgggtttgc taacagctgc tgcgattaca catggcatgg atgaattata caaataa 717

<210> 10  
 <211> 238  
 <212> PRT  
 <213> Aequoria coerulescens

<400> 10  
 Met Ser Lys Gly Ala Glu Leu Phe Thr Gly Ile Val Pro Ile Leu Ile  
 1 5 10 15  
 Glu Leu Asn Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
 20 25 30  
 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys

35	40	45
Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Leu		
50	55	60
Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln		
65	70	75
His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Ile Gln Glu Arg		
85	90	95
Thr Ile Phe Phe Glu Asp Asp Gly Asn Tyr Lys Ser Arg Ala Glu Val		
100	105	110
Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Thr Gly Thr		
115	120	125
Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly Asn Lys Met Glu Tyr Asn		
130	135	140
Tyr Asn Ala His Asn Val Tyr Ile Met Thr Asp Lys Ala Lys Asn Gly		
145	150	155
Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val		
165	170	175
Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro		
180	185	190
Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Thr Leu Ser		
195	200	205
Lys Asp Pro Asn Glu Lys Arg Asp His Met Ile Tyr Phe Gly Phe Val		
210	215	220
Thr Ala Ala Ala Ile Thr His Gly Met Asp Glu Leu Tyr Lys		
225	230	235

<210> 11  
<211> 717  
<212> DNA  
<213> Aequoria coerulescens

<400> 11  
atgagtaaaag gagcagaact tttcaactgga attgtcccaa ttcttattga attaaatgg 60  
gatgttaatg ggcacaaatt ctctgtcagt ggagaggcg aaggtgatgc gacatacgga 120  
aagttAACCC ttAAATTAT ttgcactaca ggAAAactac ctgttccatg gccaacactt 180  
gtcaactactc tctcttatgg tttcaatgc ttttcaagat atccagatca tatgaaacag 240  
catgacttct tcaagagtgc catgcctgaa ggttatatac aggaaagaac tatattttc 300  
gaagatgacg ggaactacaa gtgcgtgct gaagtcaagt tcgagggtga taccctgg 360  
aatagaatcg agttaacagg tactgatttt aaagaagatg gaaacatcct tggaaataaa 420  
atgaaataca actataacgc acataatgta tacatcatga cagacaaagc aaaaaatgga 480  
atcaaagttt acttcaaaaat tagacacaac attgaagatg gaagcggtca acttgagac 540  
cattatcaac aaaatactcc aattggcgat ggcccgttcc ttttaccaga taaccattac 600  
ctgtccacac aatctgcctt ttccaaagat cccaaacaaa agagagatca catgatctat 660  
tttgggtttgc taacagctgc tgcgattaca catggcatgg atgaactata caaataa 717

<210> 12  
<211> 238  
<212> PRT  
<213> Aequoria coerulescens

<400> 12  
Met Ser Lys Gly Ala Glu Leu Phe Thr Gly Ile Val Pro Ile Leu Ile  
1 5 10 15  
Glu Leu Asn Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
20 25 30  
Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys

35	40	45
Thr	Thr	Gly
Lys	Lys	Leu
Pro	Pro	Val
50	55	60
Ser	Tyr	Gly
Val	Val	Gln
Cys	Phe	Ser
Arg	Tyr	Pro
65	70	75
His	Asp	Phe
Phe	Phe	Lys
Ser	Ala	Met
Met	Pro	Glu
85	90	95
Thr	Ile	Phe
Phe	Phe	Glu
Asp	Asp	Gly
Gly	Asn	Tyr
Lys	Ser	Arg
Arg	Ala	Glu
100	105	110
Lys	Phe	Glu
Gly	Asp	Thr
Leu	Val	Asn
Arg	Ile	Glu
115	120	125
Asp	Phe	Lys
Glu	Asp	Gly
Asn	Ile	Leu
Leu	Gly	Asn
Lys	Met	Glu
130	135	140
Tyr	Asn	Ala
His	Asn	Val
Asn	Tyr	Ile
Ile	Met	Thr
145	150	155
Asp	Asp	Lys
Ala	Asn	Asn
160	165	170
Ile	Lys	Val
Val	Phe	Lys
Ile	Arg	His
His	Asn	Ile
Ile	Glu	Asp
Gly	Ser	Val
175	180	185
Gln	Leu	Ala
Ala	Asp	His
Tyr	Gln	Gln
Gln	Asn	Thr
190	195	200
Pro	Ile	Gly
Ile	Gly	Asp
Gly	Pro	
205	210	215
Lys	Asp	Pro
Pro	Asn	Glu
Glu	Lys	Arg
Arg	Asp	His
His	Met	Ile
Ile	Tyr	Phe
Phe	Gly	Phe
Val		
225	230	235

<210> 13  
 <211> 717  
 <212> DNA  
 <213> Aequoria coerulescens

<400> 13  
 atgagtaaag gagcagaact tttcaactgga attgtccaa ttcttattga attaaatgg 60  
 gatgttaatg ggcacaaatt ctctgtcagt ggagagggcg aaggtgatgc gacatacgga 120  
 aagttaaccc ttaaatttat ttgcactaca ggaaaactac ctgttccatg gccaacactt 180  
 gtcactactc tctcttatgg tggtaatgc ttttcaagat atccagatca tatgaaacag 240  
 catgacttct tcaagagtgc catgcctgaa ggttatatac aggaaagaac tatattttc 300  
 gaagatgacg ggaactacaa gtcgcgtgct gaagtcaagt tcgagggtga taccctgg 360  
 aatagaatcg agttaacagg tactgattt aaagaagatg gaaacatcct tggaaataaa 420  
 atgaaataca actataacgc acataatgta tacatcatga cagacaaagc aaaaaatgga 480  
 atcaaagtta acttcaaaat tagacacaac attgaagatg gaagcgttca acttgagac 540  
 cattatcaac aaaatactcc aattggcgat ggccctgtcc ttttaccaga taaccattac 600  
 ctgtccacac aatctgcctt ttccaaagat cccaacgaaa agagagatca catgatctat 660  
 tttgagtttgc taacagctgc tgcgattaca catggcatgg atgaactata caaataa 717

<210> 14  
 <211> 238  
 <212> PRT  
 <213> Aequoria coerulescens

<400> 14  
 Met Ser Lys Gly Ala Glu Leu Phe Thr Gly Ile Val Pro Ile Leu Ile  
 1 5 10 15  
 Glu Leu Asn Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
 20 25 30  
 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys

35	40	45
Thr	Thr	Gly
Lys	Lys	Leu
50	55	60
Ser	Tyr	Gly
Val	Val	Gln
65	70	75
His	Asp	Phe
Phe	Phe	Lys
85	90	95
Thr	Ile	Phe
Phe	Phe	Glu
100	105	110
Lys	Phe	Glu
Gly	Asp	Thr
115	120	125
Asp	Phe	Lys
Lys	Glu	Asp
Gly	Asn	Ile
130	135	140
Tyr	Asn	Ala
His	Asn	Val
145	150	155
Ile	Lys	Val
Lys	Asn	Phe
Ile	Arg	His
165	170	175
Gln	Leu	Ala
Ala	Asp	His
Tyr	Gln	Gln
180	185	190
Val	Leu	Leu
Pro	Pro	Asp
Asn	Asn	His
195	200	205
Lys	Asp	Pro
Pro	Asn	Glu
Lys	Arg	Asp
210	215	220
Thr	Ala	Ala
Ala	Ile	Thr
225	230	235
His	Gly	Met
Glu	Leu	Tyr
Lys		

<210> 15  
 <211> 717  
 <212> DNA  
 <213> Aequoria coerulescens

<400> 15  
 atgagtaaaag gagcagaact tttcaactgga attgtcccaa ttcttattga attaaatgg 60  
 gatgttaatg ggcacaaatt ctctgtcagt ggagagggcg aaggtgatgc gacatacgga 120  
 aagttAACCC ttAAATTAT ttgcactaca ggAAAactac ctgttccatg gccaacactt 180  
 gtcactactc tcttttatgg tttcaatgc ttttcaagat atccagatca tatgaaacag 240  
 catgacttct tcaagagtgc catgcctgaa ggttatatac aggaaaagaac tatattttc 300  
 gaagatgacg ggaactacaa gtcgcgtgct gaagtcaagt tcgagggtga taccctgg 360  
 aatagaatcg agttaacagg tactgatttt aaagaagatg gaaacatcct tggaaataaa 420  
 atgaaataca actataacgc acataatgta tacatcatga cagacaaagc aaaaaatgga 480  
 atcaaagtta acttcaaaat tagacacaac attgaagatg gaagcgttca acttgagac 540  
 cattatcaac aaaatactcc aattggcgat ggccctgtcc ttttaccaga taaccattac 600  
 ctgtccacac aatctgcctt ttccaaagat cccaaacaaa agagagatca catgatcctg 660  
 tttgagtttgc taacagctgc tgcgattaca catggcatgg atgaactata caaataa 717

<210> 16  
 <211> 238  
 <212> PRT  
 <213> Aequoria coerulescens

<400> 16  
 Met Ser Lys Gly Ala Glu Leu Phe Thr Gly Ile Val Pro Ile Leu Ile  
 1 5 10 15  
 Glu Leu Asn Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
 20 25 30  
 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys

35	40	45
Thr	Thr	Gly
Lys	Lys	Leu
Pro	Pro	Val
Trp	Pro	Trp
Pro	Thr	Leu
Leu	Val	Thr
Thr	Thr	Leu
50	55	60
Ser	Tyr	Gly
Val	Val	Gln
Cys	Phe	Ser
Arg	Tyr	Pro
Tyr	Asp	His
Pro	Asp	Met
His	Met	Lys
Gln		
65	70	75
80		
His	Asp	Phe
Phe	Phe	Lys
Ser	Ala	Met
Met	Pro	Glu
Gly	Tyr	Ile
Ile	Gln	Glu
Glu		
85	90	95
Thr	Ile	Phe
Phe	Phe	Glu
Glu	Asp	Asp
Asp	Gly	Asn
Tyr	Lys	Ser
Ser	Arg	Ala
Arg	Glu	Val
100	105	110
Lys	Phe	Glu
Glu	Gly	Asp
Asp	Thr	Leu
Leu	Val	Asn
Asn	Arg	Ile
Ile	Glu	Leu
Gly		
115	120	125
Asp	Phe	Lys
Lys	Glu	Asp
Asp	Gly	Asn
Ile	Leu	Gly
Gly	Asn	Lys
Lys	Met	Glu
Glu	Tyr	Asn
130	135	140
Tyr	Asn	Ala
Ala	His	Asn
Asn	Val	Tyr
Tyr	Ile	Met
Met	Thr	Asp
Asp	Lys	Ala
Ala	Lys	Asn
Gly		
145	150	155
160		
Ile	Lys	Val
Val	Asn	Phe
Phe	Lys	Ile
Ile	Arg	His
His	Asn	Ile
Ile	Glu	Asp
Asp	Gly	Ser
Ser	Val	
165	170	175
Gln	Leu	Ala
Ala	Asp	His
His	Tyr	Gln
Gln	Gln	Asn
Asn	Thr	Pro
Thr	Ile	Gly
Gly	Asp	Gly
Pro		
180	185	190
Val	Leu	Leu
Leu	Pro	Asp
Asn	His	Tyr
Tyr	Leu	Ser
Ser	Thr	Gln
Gln	Ser	Ala
Ala	Leu	Ser
195	200	205
Lys	Asp	Pro
Pro	Asn	Glu
Glu	Lys	Arg
Arg	Asp	His
His	Met	Ile
Ile	Leu	Phe
Phe	Glu	Phe
Val		
210	215	220
Thr	Ala	Ala
Ala	Ile	Thr
Thr	His	Gly
Gly	Met	Asp
Asp	Glu	Leu
Leu	Tyr	Lys
225	230	235

<210> 17  
 <211> 717  
 <212> DNA  
 <213> Aequoria coerulescens

<400> 17  
 atgagtaaag gagcagaact tttcaactgga attgtccaa ttcttattga attaaatgg 60  
 gatgttaatg ggcacaaatt ctctgtcagt ggagagggcg aaggtgatgc gacatacgg 120  
 aagttAACCC ttaaatttat ttgcactaca ggaaaactac ctgttccatg gccaacactt 180  
 gtcactactc tctcttatgg tggtaatgc ttttcaagat atccagatca tatgaaacag 240  
 catgacttct tcaagagtgc catgcctgaa ggttatatac aggaaagaac tatattttc 300  
 gaagatgacg ggaactacaa gtgcgtgct gaagtcaagt tcaagggtga taccctgg 360  
 aatagaatcg agttaacagg tactgattt aaagaagatg gaaacatcct tggaaataaa 420  
 atgaaataca actataacgc acagaatgta tacatcatga cagacaaagc aaaaaatgga 480  
 atcaaagtta acttcaaaat tagacacaac attgaagatg gaagcgttca acttgagac 540  
 cattatcaac aaaatactcc aattggcgat ggccctgtcc ttttaccaga taaccattac 600  
 ctgtcccacac aatctgcctt ttccaaagat cccaaacgaaa agagagatca catgatcctg 660  
 ctggagtttgc taacagctgc tgcgattaca catggcatgg atgaactata ccaataa 717

<210> 18  
 <211> 238  
 <212> PRT  
 <213> Aequoria coerulescens

<400> 18  
 Met Ser Lys Gly Ala Glu Leu Phe Thr Gly Ile Val Pro Ile Leu Ile  
 1 5 10 15  
 Glu Leu Asn Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
 20 25 30  
 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys

35	40	45
Thr	Thr	Gly
Lys	Lys	Leu
Pro	Pro	Val
50	55	60
Ser	Tyr	Gly
Val	Val	Gln
Cys	Phe	Ser
Arg	Tyr	Pro
65	70	75
His	Asp	Phe
Phe	Phe	Lys
Ser	Ala	Met
85	90	95
Thr	Ile	Phe
Phe	Phe	Glu
Asp	Asp	Gly
100	105	110
Lys	Phe	Gly
Phe	Asp	Thr
115	120	125
Asp	Phe	Lys
Phe	Glu	Asp
130	135	140
Tyr	Asn	Ala
Ala	Gln	Asn
145	150	155
Ile	Lys	Val
Asn	Phe	Lys
Ile	Arg	His
165	170	175
Gln	Leu	Ala
Leu	Asp	His
180	185	190
Val	Leu	Leu
Pro	Pro	Asp
195	200	205
Lys	Asp	Pro
Pro	Asn	Glu
210	215	220
Thr	Ala	Ala
Ala	Ile	Thr
225	230	235

<210> 19  
 <211> 717  
 <212> DNA  
 <213> Aequoria coerulescens

<400> 19  
 atgagtaaag gagcagaact tttcaactgga attgtccaa ttcttattga attaaatgg 60  
 gatgttaatg ggcacaaatt ctctgtcagt ggagagggcg aaggtgatgc gacatacgg 120  
 aagttAACCC ttAAATTAT ttgcactaca ggAAAactac ctgttccatg gccaacactt 180  
 gtcgctactc tctcttatgg tggtaatgc ttttcaagat atccagatca tatgaaacag 240  
 catgacttct tcaagagtgc catgcctgaa ggttatatac aggaaagaac tatattttc 300  
 gaagatgacg ggaactacaa gtcgcgtgct gaagtcaagt tcgagggtga taccctgg 360  
 agtagaatcg agttaacagg tactgatttt aaagaagatg gaaacatcct tggaaataaa 420  
 atgaaataca actataacgc aactaatgta tacatcatga cagacaaacg aaaaaatgga 480  
 atcaaagttt acttcaaaaat tagacacaac attaaagatg gaagcgttca acttgagac 540  
 cattatcaac aaaatactcc aattggcgat ggcccgttcc ttttaccaga taaccattac 600  
 ctgtccacac aatctgcctt ttccaaagat cccaaacaaa agagagatca catgatctat 660  
 tttgagttt taacagctgc tgcgattaca catggcatgg atgaactata caaataa 717

<210> 20  
 <211> 238  
 <212> PRT  
 <213> Aequoria coerulescens

<400> 20  
 Met Ser Lys Gly Ala Glu Leu Phe Thr Gly Ile Val Pro Ile Leu Ile  
 1 5 10 15  
 Glu Leu Asn Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
 20 25 30  
 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys

35	40	45
Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Ala Thr Leu		
50	55	60
Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln		
65	70	75
His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Ile Gln Glu Arg		
85	90	95
Thr Ile Phe Phe Glu Asp Asp Gly Asn Tyr Lys Ser Arg Ala Glu Val		
100	105	110
Lys Phe Glu Gly Asp Thr Leu Val Ser Arg Ile Glu Leu Thr Gly Thr		
115	120	125
Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly Asn Lys Met Glu Tyr Asn		
130	135	140
Tyr Asn Ala Thr Asn Val Tyr Ile Met Thr Asp Lys Ala Lys Asn Gly		
145	150	155
Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Lys Asp Gly Ser Val		
165	170	175
Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro		
180	185	190
Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser		
195	200	205
Lys Asp Pro Asn Glu Lys Arg Asp His Met Ile Tyr Phe Glu Phe Val		
210	215	220
Thr Ala Ala Ala Ile Thr His Gly Met Asp Glu Leu Tyr Lys		
225	230	235

<210> 21  
 <211> 717  
 <212> DNA  
 <213> Aequoria coerulescens

<400> 21  
 atgagtaaag gagcagaact tttcaactgga attgtccaa ttcttattga attaaatgg 60  
 gatgttaatg ggcacaaatt ctctgtcagt ggagagggcg aaggtgatgc gacatacgg 120  
 aagttaaccc ttaaatttat ttgcactaca ggaaaactac ctgttccatg gccaacactt 180  
 gtcactactc tctcttatgg tggtaatgc ttttcaagat atccagatca tatgaaacag 240  
 catgacttct tcaagagtgc catgcctgaa ggttatatac aggaaagaac tatattttc 300  
 gaagatgacg ggaactacaa gtgcgtgct gaagtcaagt tcgagggtga taccctgg 360  
 aatagaatcg agttaacagg tactgattt aaagaagatg gaaacatcct tggaaataaa 420  
 atgaaataca actataacgc atctaattgt tacatcatga cagacaaagc aaaaaatgga 480  
 atcaaagtta acttgaaaat tagacacaac attgcagatg gaagcgttca acttgac 540  
 cattatcaac aaaatactcc aattggcgat ggccctgtcc ttttaccaga taaccattac 600  
 ctgtcccacac aatctgcctt ttccaaagat cccaaacgaaa agagagatca catgatctat 660  
 tttgagtttgc taacagctgc tgcgattaca catggcatgg atgaactata caaataa 717

<210> 22  
 <211> 238  
 <212> PRT  
 <213> Aequoria coerulescens

<400> 22  
 Met Ser Lys Gly Ala Glu Leu Phe Thr Gly Ile Val Pro Ile Leu Ile  
 1 5 10 15  
 Glu Leu Asn Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
 20 25 30  
 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys

35	40	45
Thr	Thr	Gly
Lys	Lys	Leu
Pro	Pro	Val
Trp	Pro	Trp
Pro	Thr	Leu
Leu	Val	Thr
Thr	Thr	Leu
50	55	60
Ser	Tyr	Gly
Val	Val	Gln
Cys	Phe	Ser
Arg	Tyr	Pro
Tyr	Asp	His
Met	Met	Lys
Gln		
65	70	75
His	Asp	Phe
Phe	Phe	Lys
Lys	Ser	Ala
Met	Met	Pro
Glu	Gly	Tyr
Tyr	Ile	Gln
Ile	Glu	Arg
85	90	95
Thr	Ile	Phe
Phe	Phe	Glu
Glu	Asp	Asp
Gly	Asn	Tyr
Lys	Ser	Arg
Arg	Ala	Glu
Val		
100	105	110
Lys	Phe	Glu
Glu	Gly	Asp
Asp	Thr	Leu
Leu	Val	Asn
Arg	Ile	Glu
Ile	Gly	Asn
Lys	Met	Glu
Met	Tyr	Asn
130	135	140
Tyr	Asn	Ala
Ala	Ser	Asn
Asn	Val	Tyr
Ile	Met	Thr
Asp	Lys	Ala
Lys	Asn	Gly
Asn	Gly	Thr
145	150	155
Ile	Lys	Val
Val	Asn	Leu
Leu	Lys	Ile
Ile	Arg	His
His	Asn	Ile
Ile	Ala	Asp
Asp	Gly	Ser
Val		
165	170	175
Gln	Leu	Ala
Ala	Asp	His
His	Tyr	Gln
Gln	Gln	Asn
Asn	Thr	Pro
Thr	Ile	Gly
Gly	Asp	Pro
Pro	180	185
Val	Leu	Leu
Leu	Pro	Asp
Asn	His	Tyr
Tyr	Leu	Ser
Ser	Thr	Gln
Gln	Ser	Ala
Ala	Leu	Ser
195	200	205
Lys	Asp	Pro
Pro	Asn	Glu
Glu	Lys	Arg
Arg	Asp	His
His	Met	Ile
Ile	Tyr	Phe
Phe	Glu	Phe
Val		
210	215	220
Thr	Ala	Ala
Ala	Ile	Thr
His	Gly	Met
Met	Asp	Glu
Glu	Leu	Ile
Ile	Lys	
225	230	235

<210> 23  
 <211> 717  
 <212> DNA  
 <213> Aequoria coerulescens

<400> 23  
 atgagcaagg gcgccgagct gttcacccgc atcgtgccc tccctgatcga gctgaatggc 60  
 gatgtaatg gcccacaagtt cagcgtgagc ggcgaggcg agggcgatgc cacctacggc 120  
 aagctgaccc tgaagttcat ctgcaccacc ggcaagctgc ctgtgcccctg gcccacccctg 180  
 gtgaccaccc tgagctacgg cgtgcagtgc ttctcacgct accccgatca catgaagcag 240  
 cacgacttct tcaagagcgc catgccttag ggctacatcc aggagcgcac catcttcttc 300  
 gagatgacg gcaactacaa gtcgcgcgc gaggtgaagt tcgagggcga taccctggtg 360  
 aatcgcatcg agctgacccg caccgatttc aaggagatg gcaacatcct gggcaataag 420  
 atggagtaca actacaacgc ccacaatgtg tacatcatga ccgacaaggc caagaatggc 480  
 atcaaggtga acttcaagat ccgcacacaac atcgaggatg gcagcgtgca gctggccgac 540  
 cactaccaggc agaataacccc catcgccgat ggcctgtgc tgctgcccga taaccactac 600  
 ctgtccaccc agagcgccct gtccaaggac cccaaacgaga agcgcgatca catgatctac 660  
 ttcggcttcg tgaccgcgcg cgcacatcacc cacggatgg atgagctgta caagtga 717

<210> 24  
 <211> 238  
 <212> PRT  
 <213> Aequoria coerulescens

<400> 24  
 Met Ser Lys Gly Ala Glu Leu Phe Thr Gly Ile Val Pro Ile Leu Ile  
 1 5 10 15  
 Glu Leu Asn Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
 20 25 30  
 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys

35	40	45
Thr	Gly Lys Leu Pro Val Pro Trp Pro	Thr Leu Val Thr Thr Leu
50	55	60
Ser	Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln	
65	70	75
His	Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Ile Gln Glu Arg	
	85	90
Thr	Ile Phe Phe Glu Asp Asp Gly Asn Tyr Lys Ser Arg Ala Glu Val	
	100	105
Lys	Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Thr Gly Thr	
	115	120
Asp	Phe Lys Glu Asp Gly Asn Ile Leu Gly Asn Lys Met Glu Tyr Asn	
	130	135
Tyr	Asn Ala His Asn Val Tyr Ile Met Thr Asp Lys Ala Lys Asn Gly	
145	150	155
Ile	Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val	
	165	170
Gln	Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro	
	180	185
Val	Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser	
	195	200
Lys	Asp Pro Asn Glu Lys Arg Asp His Met Ile Tyr Phe Gly Phe Val	
	210	215
Thr	Ala Ala Ala Ile Thr His Gly Met Asp Glu Leu Tyr Lys	
	225	230
		235

<210> 25  
 <211> 238  
 <212> PRT  
 <213> Aequoria coerulescens

<400> 25		
Met	Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val	
1	5	10
Glu	Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu	
20	25	30
Gly	Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys	
35	40	45
Thr	Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe	
50	55	60
Ser	Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln	
65	70	75
His	Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg	
	85	90
Thr	Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val	
	100	105
Lys	Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile	
	115	120
Asp	Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn	
	130	135
Tyr	Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly	
145	150	155
Ile	Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val	
	165	170
Gln	Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro	
	180	185
		190

Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser  
195 200 205  
Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val  
210 215 220  
Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys  
225 230 235